REMARKS

The Examiner rejected Claim 1 under 35 U.S.C. 102(b) as being anticipated by Adler, *et al* (hereafter "Adler"). The above amendments cancel Claim 1, and hence, render this issue moot.

The Examiner rejected Claim 2 under 35 U.S.C. 103(a) as being unpatentable over Adler in view of Shark, et al (hereafter "Shark"). The above amendments cancel Claim 2, and hence, render this rejection moot.

The Examiner rejected Claims 3, 6-7, 9, 11 and 14 under 35 U.S.C. 103(a) as being unpatentable over Adler in view of Taswell. Applicant submits that Claims 3, 7, and 11, as amended above are patentable over the cited references. Applicant traverses this rejection with respect to the remaining claims.

With reference to Claims 3, 7, and 11, the Examiner argues that the combined references teach a thresholding filter in which the high frequency component is further analyzed into a plurality of high frequency components, at least one of which is subjected to a thresholding operation. The Examiner argues that such a system satisfies the limitations of the claim, since the first analyzer, and the last synthesizer in the filter can be viewed as the mathematical transform and its inverse, respectively. The remaining analyzers and filters would then correspond to the thresholding filter. The above amendments to Claim 3 make it clear that the mathematical transform in question is a non-linear transformation. It should be noted that a wavelet transform is a linear transformation. Hence, this amendment clearly distinguishes the present invention from that proposed by the Examiner.

With respect to Claims 6 and 14, the Examiner admits that Adler does not disclose the threshold value depending on the amplitude of the low frequency signal component. The Examiner maintains that Taswell teaches such a system. In particular, the Examiner argues that the threshold value in the Taswell reference can depend on the input data. The Examiner argues that Taswell teaches that the input signal in Taswell is "X(t)" and the threshold value depends on "U" wherein "U" represents the data that was to be transmitted and that U must

be the low frequency component in the receiver since the noise is the high frequency component signal that is thresholded and removed. Applicant must disagree with the Examiner's reading of Taswell. First, U represents the input data that is to be denoised in the equation in the second column of page 13 which denotes the shrinkage denoising transform in a symbolic manner. Second, the high frequency component is not removed in the algorithm taught in Taswell. Only that part of the component for which the amplitude is less than the threshold value is removed. Third, it should be noted that Taswell does not provide an algorithm for determining the threshold value; Taswell only states that one can make the threshold value and the other parameters of the soft thresholding algorithm depend on the input data. The Examiner has not pointed to any suggestion that the threshold value depends on the low-frequency component generated in the transform. Accordingly, Applicant submits that the Examiner has not made a *primia facia* case for obviousness with respect to Claims 6 and 14.

With respect to Claim 9, the Examiner argues that Adler teaches a multilevel high frequency decomposition in which the high frequency component from the first decomposition is re-analyzed to provide additional high-frequency components. The Examiner then argues that the second decomposition of the high frequency component can be viewed as the second thresholding filter required by the claim. It should be noted that the claim requires that the output of the first denoising filter, i.e., the signal created by the synthesizer of that filter, be the input to the second denoising filter. It is sufficient to note that the system suggested by the Examiner does not satisfy this limitation, as the input to the second set of analyzers is not the output of a synthesizer in the reconstruction section. Accordingly, the Examiner has not made a *primia facia* case for obviousness with respect to Claim 9 or the claims dependent therefrom.

The Examiner rejected claims 4-5, 8, and 12-13 under 35 U.S.C. 103(a) as being unpatentable over Adler in view of Taswell and further in view of Applicant Admitted Prior Art (AAPA). Applicant traverses this rejection.

With respect to Claims 4, 8, and 12, the Examiner argues that Adler and Taswell teach all of the limitations of these claims except for the limitation that the signal converter generates a signal determined by the logarithm or the square of the signal that is input to the

signal converter. The Examiner maintains that the passages in the "Background of the Invention" teach an input converter having an amplitude determined by the logarithm of the input signal. The Examiner maintains that one of ordinary skill would be motivated to include such a signal converter in the device taught by Adler, as modified by the Examiner's selected teachings from Taswell, because it would provide a more useful display of the signals.

The prior art passage identified by the Examiner teaches that some prior art video display systems that utilize a denoising system display the logarithm of the final filtered signal on the video screen. There is no teaching of tranforming the original data via a logarithmic transform and then performing the inverse transformation. At best, the combination of the teachings identified by the Examiner would lead to a system in which the logarithm of the final filtered signal is generated for display; however, the inverse logarithm is not applied to arrive at a final filtered signal. Furthermore, the signal obtained by taking the logarithm is not used as an input to the denoising system. This is not the present invention as claimed in these claims. Hence, Applicant submits that the Examiner has not made a *primia facia* case for obviousness with respect to Claims 4, 8, and 12.

With respect to Claims 5 and 13, the Examiner admits that the references and AAPA does not teach the limitation of the claim. The Examiner attempts to overcome this problem by arguing that the choice of mathematical function used to process the input signal is not critical, and hence, the above combination of teachings also extends to the case in which the logarithm function is replaced by the square function. As noted in the specification, filtering the logarithm of the signal provides advantages in reducing trace noise; while the square function is useful in filtering signals that are dominated by a noise floor. Hence, the choice of function is not merely a matter of design choice. Accordingly, there are additional grounds for allowing Claims 5 and 13.

The Examiner rejected Claim 10 under 35 U.S.C. 103(a) as being unpatentable over Adler in view of Taswell in further view of Shark. Applicant traverses this rejection and repeats the arguments made above with respect to the rejection of Claim 9 from which Claim 10 depends.

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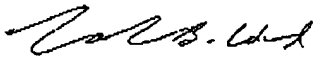
Respectfully Submitted,



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